REMARKS

New claims 42-45 have been added. Accordingly, claims 17-45 are presently pending in this application. Claims 17-31 were previously withdrawn.

In the August 29, 2006 Office Action, claims 32-41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,782,291 ("Blandin") in view of U.S. Patent No. 5,387,861 ("Neiderhofer").

A. Response to Section 103(a) Rejection

Claim 32 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Blandin in view of Neiderhofer. As described below, the rejection of claim 32 should be withdrawn because the combination of Blandin and Neiderhofer does not teach or suggest all of the features of this claim.

(1) Claim 32 is Directed to a Method of Making a Testing Device That Includes Configuring at Least One Pin Receptacle to be Operatively Couplable to at Least One Second Contact and to Receive Pins of an Electrical Socket Device

Claim 32 is directed toward a method of making a testing device that includes coupling a load board to a base member. The method can further include removably coupling multiple electrically conductive first contacts to the base member. The first contacts can have first portions that are thereby operatively coupled to the load board and second portions that are operatively couplable to multiple second contacts. The method can still further include operatively coupling the second contacts to the second portions of the first contacts. The method can yet further include configuring at least one pin receptacle to be operatively couplable to at least one of the second contacts and to receive pins of an electrical socket device.

(2) Blandin Discloses a Unit for Testing Electrical Components in a Sub-Zero Environment Where a Socket and DUT Card are Separated From a Test Head

Blandin discloses a unit for testing electrical components in a sub-zero environment (Abstract). The unit includes an isothermal chamber 60 provided with a first socket 80 on a DUT card 81, which is removable from a DUT fixture at the bottom of the chamber 60 (9:15-18). The

DUT card 81 is a printed circuit board that has a circumferential set of contacts 83 on the top and bottom surfaces of the card so that vertically corresponding contacts are electrically connected through holes or vias (9:18-23). The first socket 80 is mounted in a first lead frame 85 and connected to the top of the contacts 83 via the first lead frame 85 (9:23-24). The first socket 80 and the DUT card 81 are the only pieces of equipment in the chamber that need to be changed out to test different electronic devices (9:24-27; 10:31-33; 11:5-10).

The DUT fixture 110 is a printed circuit board that has a set of pins 111 that contact the contacts 83 on the underside of the DUT card 81 through "thru holes" or "vias" when the DUT card 81 is secured to the DUT fixture using screws 84 (9:15-24; 10:2-8). The DUT Fixture 110, located inside the chamber 60, is connected via wires 112 to vertically oriented cards 106 that are carried on a base card 108 on the bottom exterior of the chamber 60 (10:8-21; Figure 5). The vertical cards 106 can be inserted into an aperture 118 of a second socket 105 of a removable test head 102, electrically connecting the vertical cards 106 to the test head 102 (10:15-35). The removable test head 102 includes a local load board 103 on which the second socket 105 is mounted (9:64-66; 10:16-35; 11:11-23; Figure 5). More specifically, the second socket 105 is mounted in a second lead frame 113 and the second lead frame 113 is connected to contacts 118 on the outside perimeter of a local load board 103 (9:64-66; 10:16-35; 11:11-23; Figure 5). The contacts on the local load board 103 are connected to a cable 140 that allows the test head 102 to be connected to a conventional test unit (11:24-28).

The removable test head 102 can be pressed onto, and removed from, the bottom of the chamber 60 (10:15-35). The test head 102 has locator pins 130 that are used to position the test head 102 relative to the vertical cards 106 on the chamber 60 when the test head is pressed onto the bottom of the chamber 60 (11:11-23). The locating pins 130 include grooves 132 that serve as detents to hold the test head 102 in place (11:11-23). The arrangement in Blandin allows the first socket 80 and the DUT card 81 to remain inside the chamber at a selected temperature and the test head 102 to remain outside of the chamber 60 (10:51-60). Because the test head is separated from the first socket 80 and the DUT card 81 by the chamber walls and heavy insulation, frosting of the test head can be eliminated (5:51-62). Components inside the isothermal chamber 60 can be manipulated using arm holes 70 and gloves 72, allowing multiple

devices to be tested while maintaining the chamber 60 at a constant temperature (8:56-9:9). The chamber 60 includes shelves for storing various components before and after testing (8:56-9:9). Accordingly, Blandin does not teach or suggest configuring at least one pin receptacle to be operatively couplable to at least one of the second contacts and to receive pins of an electrical socket device.

(3) Neiderhofer Discloses a Burn-In Board Assembly With a Socket Soldered to a Circuit Board

Neiderhofer discloses a burn-in board assembly that includes a socket 32 soldered to the top surface of a printed circuit board 30 (3:49-63). More particularly, pins or contacts (which are not shown in the figures) on the socket 32 make contact with electrical traces on the circuit board 30 (3:49-63). The printed circuit board 30 includes a set of male pins 15 extending from the bottom of the printed circuit board 30 (3:49-63). The burn-in board assembly also includes a mother board 2 with holes 11 having soldered pins 13 and positioned to accept the male pins 15 of the printed circuit board 30 (3:1-15).

The burn-in assembly also includes a program card assembly 4 with a printed circuit board 25 that is used to program the voltage and signal conditions delivered to the socket during the burn-in process (3:28-48). The program card assembly 4 has circuit traces connected to male pins 16 (3:28-48). The mother board 2 also has holes 11 with soldered pins 14 for accepting the male pins 15 of the program card assembly 4 (3:1-15 and 28-48). Alternately, the socket adapter printed circuit board 30 can be eliminated and the sockets 32 can be permanently attached directly to the mother board 2 (4:4-13). In Neiderhofer, a cooling gas can be passed under the mother board to maintain a lower ambient temperature around the program card 4 than is being seen by the devices under test (5:3-22). A purpose of the burn-in board in Neiderhofer is to position the drive circuitry on the program card 4 in close proximity to the device being burned in to reduce high frequency drive problems (4:50-62).

(4) The Combination of Blandin and Neiderhofer Fails to Disclose, Among Other Features, Configuring at Least One Pin Receptacle to be Operatively Couplable to At Least One of the Second Contacts and to Receive Pins of an Electrical Socket Device

The combination of Blandin and Neiderhofer fails to teach or suggest the combination of elements set forth in claim 32. The above referenced Office Action states that Blandin does not teach or suggest at least one pin receptacle to be operatively couplable to at least one of the second contacts and to receive pins of an electrical socket device. The Office Action goes on to suggests that Neiderhofer cures this deficiency. The applicant's representative respectively disagrees. In Neiderhofer contacts on the underside of the socket 32 are apparently soldered to traces of a circuit board, which in turn can be connected to a mother board. Alternately, in Neiderhofer the socket 32 is permanently attached to the mother board. Neiderhofer makes no mention of any type of pin receptacle for receiving pins of an electrical socket device. Accordingly, neither Blandin nor Neiderhofer teaches or suggests at least one pin receptacle for receiving pins of an electrical socket device or at least one pin receptacle to be operatively couplable to at least one of the second contacts and to receive pins of an electrical socket device.

Additionally, neither Blandin nor Neiderhofer teaches or suggests removably coupling multiple electrically conductive first contacts to the base member. The above referenced Office Action suggests that the wires 112 connecting the DUT fixture 110 to vertically oriented cards 106 in Blandin are equivalent to the first contacts recited in claim 32. Although the present Office Action does not identify which elements in Blandin are alleged equivalent to the base member of claim 32, past Office Actions have suggested that the base member is a combination of the vertical cards 106, the DUT fixture 110, the circular base card 108, and the cylinder 109. However, even if for the sake of argument the wires 112 were equivalent to the first contacts and the combination of cards, fixtures, and cylinder were equivalent to a base member, there is no indication in Blandin that these wires 112 are removably coupled to the combination of cards, fixtures, and cylinder. In fact, these wires 112 appear to be electrically and permanently connected between the DUT fixture 110 to vertically oriented cards 106 and are buried within the Blandin testing unit. Accordingly, the combination of Blandin and Neiderhofer fails to teach or suggest removably coupling multiple electrically conductive first contacts to the base member.

Furthermore, even if for the sake of argument the combination of Blandin and Neiderhofer taught all of the elements of claim 32, one skilled in the art would not be motivated to combine the Blandin testing unit with the socket soldered to a circuit board of Neiderhofer. Blandin discloses a unit for testing electrical components in a sub-zero environment. Accordingly, in Blandin the test head is physically separated from the first socket 80 and the DUT card 81 by the chamber walls and heavy insulation (and by some distance) in order to eliminate frosting of the test head during device testing. Conversely, a purpose of Neiderhofer is to position the drive circuitry on the program card 4 of a burn-in board in close proximity to the device being burned in. Accordingly, the purpose of Blandin and the purpose of Neiderhofer would both be destroyed by combining these references.

Additionally, the purpose of Blandin is to test electrical components in a sub-zero environment. Conversely the purpose of Neiderhofer is to burn-in electrical components. In fact, the device in Neiderhofer can include a cooling gas passed under the mother board to maintain a lower ambient temperature around the program card 4 than is being seen by the devices under test. Accordingly, Blandin and Neiderhofer are non-analogous pieces of art and one skilled in the art would not be motivated to combine these references.

Furthermore, one skilled in the art would not be motivated to replace the socket 80 and DUT card 81 of the Blandin testing unit with the socket soldered to a circuit board of Neiderhofer because doing so could make the Blandin testing device more susceptible to damage. The first socket 80 and/or DUT card 81 in Blandin are intended to be removed and replaced for testing various electronic devices. In Blandin, if the first socket 80 and DUT card 81 where replaced with the socket and circuit board of Neiderhofer, the pins on the bottom of the Neiderhofer circuit board could be easily damaged during storage (especially when they are stored on shelves inside the chamber along with various devices to be tested) and/or when the socket and circuit board are manipulated using the arm holes and gloves of the isothermal chamber. Conversely, the pins 111 on the DUT fixture in Blandin can generally be protected because the pins on the DUT fixture can generally remain covered by a DUT card during periods of testing and during periods of inactivity. Accordingly, one skilled in the art would not be

motivated to modify Blandin by replacing the socket 80 and DUT card 81 of the Blandin testing unit with the socket soldered to a circuit board of Neiderhofer.

Additionally, one skilled in the art would not be motivated to replace the socket 80 and DUT card 81 of the Blandin testing unit with the socket soldered to a circuit board of Neiderhofer because doing so could be less economical and efficient. The first socket 80 and/or DUT card 81 in Blandin are intended to be removed and replaced for testing various electronic devices. If the Blandin socket 80 and DUT card 81 were replaced with the socket soldered to a circuit board of Neiderhofer, the capability to remove and replace a Blandin socket 80 without replacing the DUT card 81 would be lost. Accordingly, if the Blandin socket 80 and DUT card 81 were replaced with the socket soldered to a circuit board of Neiderhofer, each socket would have a permanently attached circuit board, even when different sockets use identical circuit boards. Accordingly, a Blandin test unit modified with the socket soldered to a circuit board of Neiderhofer could require multiple identical circuit boards because each socket requires a dedicated and permanently attached circuit board. This can be costly and an inefficient use of resources. Therefore, one skilled in the art would not be motivated to replace the socket 80 and DUT card 81 of the Blandin testing unit with the socket soldered to a circuit board of Neiderhofer.

For at least these reasons claim 32 is patentable over the combination of Blandin and Neiderhofer. Claims 33-36 and 42-43 depend from claim 32 and, for at least this reason, claims 33-36 and 42-43 are also patentable over the combination of Blandin and Neiderhofer. Claim 37 contains features generally similar to those of claim 32, and for at least this reason, claim 37 is also patentable over the combination of Blandin and Neiderhofer. Claims 38-41 and 44-45 depend from claim 37, and for at least this reason, they too are patentable over the combination of Blandin and Neiderhofer.

In view of the foregoing, the pending claims comply with 35 U.S.C. § 112 and are patentable over the applied art. The applicant accordingly requests reconsideration of the application and a Notice of Allowance. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the applicant's representative, Tim R. Seeley (Registration No. 53,575), at (206) 359-6477.

The Commissioner is hereby authorized and requested to charge any deficiency in fees herein to Deposit Account No. 50-0665.

Respectfully submitted,

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Date: 11/29/06

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